

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

Form PTO-1449 (Modified)
(Use several sheets if necessary)

COMPLETE IF KNOWN

Application Number	09/781,046
Confirmation Number	9275
Filing Date	February 8, 2001
First Named Inventor	Kangsen Wang
Group Art Unit	1632
Examiner Name	Thaian N. Ton

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Attorney Docket No

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U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No.	U.S. Patent or Application		Name of Patentee or Inventor of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		NUMBER	Kind Code (if known)			
TNT	AA	US 2002/0004240 A1		Wang	1/10/02	
TNT	AB	5,428,132		Hirsch et al.	6/27/95	
TNT	AC	5,521,291		Curiel et al.	5/28/96	
FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.	Foreign Patent or Application		Name of Patentee or Applicant of Cited Document	Date of Publication or Filing Date of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Office	NUMBER			
TNT	AD	WO	01/73094 A2	BIOAGRI CORPORATION	10/4/01	/
TNT	AE	WO	00/29602	Cedars-Sinai Medical Center	5/25/00	/
TNT	AF	WO	00/08924	Perry et al.	2/24/00	/
TNT	AG	EP	0 846 772 A1	HOECHST AKTIENGESELLSCHAFT	10/6/98	/
OTHER PRIOR ART-NON PATENT LITERATURE DOCUMENTS						
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume issue number(s), publisher, city and/or country where published.				
TNT	AH	International Search Report for PCT International Application No. PCT/US02/02895, dated 10/7/03, 7 pages.				
TNT	AI	International Search Report for PCT International Application No. PCT/US02/40492, dated 6/5/03, 4 pages.				
TNT	AJ	International Search Report for PCT International Application No. PCT/US01/07018, dated 12/3/02, 5 pages.				
TNT	AK	Anwer, Khursheed et al., "Targeted Gene Delivery: A Two-Pronged Approach", Critical Reviews in Therapeutic Drug Carrier Systems, 17(4), pp. 377-424 (2000)				

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TNT	AL	Bookbinder, L.H. et al., "Tissue- and Species-Specific Express of sp56, a Mouse Sperm Fertilization Protein, <u>Science</u> , vol. 269, pp. 86-89 (1995)	
TNT	AM	Burks, D.J. et al., "Interaction of a Tyrosine Kinase from Human Sperm with the Zona Pellucida at Fertilization", <u>Science</u> , vol. 269, pp. 83-86 (1995)	
TNT	AN	Chang, Keejong et al., "Effective generation of transgenic pigs and mice by linker based sperm-mediated gene transfer", <u>BMC Biotechnology</u> 2002, 2:5, http://www.biomedcentral.com/1472-6750/2/5	
TNT	AO	Cheng, Alice et al., "Sperm-Egg Recognition in the Mouse: Characterization of sp56, A Sperm Protein Having Specific Affinity for ZP3", <u>The Journal of Cell Biology</u> , vol. 125, no. 4, pp. 867-878 (1994)	
TNT	AP	Cornwall, Gail A. et al., "Inhibition of the Mouse Sperm Surface α-D-Mannosidase Inhibits Sperm-Egg Binding in Vitro, <u>Biology of Reproduction</u> , vol. 44, no. 5, pp. 913-921 (1991)	
TNT	AQ	FUSI, F.M., "In vitro production of human anti-sperm antibodies: effect of an oligoclonal antibody (F6) on sperm-egg interaction," <u>Journal of Reproductive Immunology</u> , Volume 29, No. 2, 1995, pp. 135-147.	
TNT	AR	Gao, Zeren et al., "Species Diversity in the Structure of Zonadhesin, a Sperm-specific Membrane Protein Containing Multiple Cell Adhesion Molecule-like Domains", <u>The Journal of Biological Chemistry</u> , vol. 273, no. 6, pp. 3415-3421 (1998)	
TNT	AS	Gouglielidis, Tiki et al., "Inhibition of Bovine Sperm-Oocyte Fusion by the Carbohydrate GalNAc", <u>Molecular Reproduction and Development</u> , vol. 54, no. 2, pp. 179-185 (1999)	
TNT	AT	Hardy, Daniel M. et al., "A Sperm Membrane Protein That Binds in a Species-specific Manner to the Egg Extracellular Matrix Is Homologous to von Willebrand Factor", <u>The Journal of Biological Chemistry</u> , vol. 270, no. 44, pp. 26025-26028 (1995)	
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TNT	AV	Kalab, Petr et al., "p95, the Major Phosphotyrosine-containing Protein in Mouse Spermatozoa, Is a Hexokinase with Unique Properties", <u>The Journal of Biological Chemistry</u> , vol. 269, no. 5, pp. 3810-3817 (1994)	
TNT	AW	Kameda, Kinu et al., "Comparative Studies of the Antigens Recognized by Sperm-Immobilizing Monoclonal Antibodies", <u>Biology of Reproduction</u> , vol. 46, pp. 349-357 (1992)	
cited by Examiner AX		Kim et al., "Effects of Experimentally-Generated Bull Antisperm Antibodies on in Vitro Fertilization." <u>Biology of Reproduction</u> . 60: 1285-1291, 1999.	
TNT	AY	Lacy, H. Marie et al., "Sperm protein 17 is expressed on normal and malignant lymphocytes and promotes heparan sulfate-mediated cell-cell adhesion", <u>Blood</u> , vol. 98, no. 7, pp. 2160-2165 (2001)	

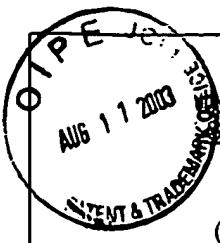
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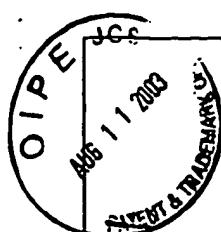
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TNT	AZ	Lu, Qingxian et al., "Sperm from β 1,4-galactosyltransferase-null mice are refractory to ZP3-induced acrosome reactions and penetrate the zona pellucida poorly", <u>Development</u> , vol. 124, pp. 4121-4131 (1997)	
TNT	BA	Miller, David J. et al., "Complementarity between sperm surface β -1,4-galactosyltransferase and egg-coat ZP3 mediates sperm-egg binding", <u>Nature</u> , vol. 357, no. 6379, pp. 589-593 (1992)	
TNT	BB	Morawatz, R., WRITTEN OPINION, issued on June 27, 2002 by PTO regarding International Application No. PCT/US01/07018, which claims the priority to U.S. Patent Appl. Serial No. 09/537,861, 9 pages.	
TNT	BC	Mori, Kazumasa et al., "Blocking of human fertilization by carbohydrates", <u>Human Reproduction</u> , vol 8, no. 10, pp. 1729-1732 (1993)	
Cited by Examiner	BD	Nakamura et al., "Identification and Characterization of a Sperm Peptide Antigen Recognized by a Monoclonal Antisperm Autoantibody Derived from a Vasectomized Mouse," <u>Biochemical and Biophysical Research Communications</u> . 205: 1503-1509, 1994.	
Cited by Examiner	BE	Naz et al., "Antibodies to Sperm-Specific Human FA-1 Inhibit in Vitro Fertilization in Rhesus Monkeys: Development of a Simian Model for Testing of anti-FA-1 Contraceptive Vaccine." <u>Journal of Reproductive Immunology</u> . 27: 111-121, 1994.	
TNT	BF	PAIN, B. et al., "Chicken Embryonic Stem Cells and Transgenic Strategies." <u>Cells Tissues Organs</u> . 1999, Vol. 165, pages 212-219.	
TNT	BG	Pereira, Ben M.J. et al., "Rat Sperm Surface Mannosidase Is First Expressed on the Plasma Membrane of Testicular Germ Cells", <u>Biology of Reproduction</u> , vol. 59, no. 6, pp. 1288-1295 (1998)	
TNT	BH	Richardson, Richard T. et al., "Sequence of a Rabbit Sperm Zona Pellucida Binding Protein and Localization during the Acrosome Reaction", <u>Developmental Biology</u> , vol. 165, no. 2, pp. 688-701 (1994)	
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TNT	BJ	SHAH, Chandrima et al., "Monoclonal Antibody Against a Human Sperm Protein Recognizes Multiple Epitopes on Rabbit and Human Sperm and Blocks Sperm Function," <u>HYBRIDOMA</u> , Volume 12, No. 6, 1993, pp. 709-718.	
TNT	BK	Töpfer-Petersen E. et al., "Spermadhesins: A new protein family. Facts, hypotheses and perspectives", <u>Andrologia</u> , vol. 30, no. 4-5, pp. 217-224 (1998)	
TNT	BL	Töpfer-Petersen E. et al., "Sperm-associated protein candidates for primary zona pellucida-binding molecules: structure-function correlations of boar spermadhesins", <u>Journal of Reproduction and Fertility Supplement</u> 50, pp. 55-61 (1996) Abstract only	

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TNT	BN	Varga, Csanad M. et al., "Receptor-Mediated Targeting of Gene Delivery Vectors: Insights from Molecular Mechanisms for Improved Vehicle Design", <u>Biotechnology and Bioengineering</u> , vol. 70, no. 6, pp. 593-605 (2000)
TNT	BO	Yamasaki, Noriyuki et al., "Expression of the Rabbit Sperm Protein Sp17 in Cos Cells and Interaction of Recombinant Sp17 With the Rabbit Zona Pellucida", <u>Molecular Reproduction and Development</u> , vol 40, no. 1, pp. 48-55 (1995)
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TNT	BR	ZANI, Massimo, "The Mechanism of Binding of Exogenous DNA to Sperm Cells: Factors Controlling the DNA Uptake," <u>Experimental Cell Research</u> , Vol. 217, No. 1, 1995, pp. 57-64.
TNT	BS	Zhu, Xiaolong et al., "Fertilization antigen-1: cDNA cloning, testis-specific expression, and immunocontraceptive effects", <u>Proceedings of the National Academy of Sciences</u> , vol. 94, no. 9, pp. 4704-4709 (1997)

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